



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
WASHINGTON, D.C. 20460

April 19, 2011

OFFICE OF  
SOLID WASTE AND  
EMERGENCY RESPONSE

VIA E-MAIL AND FEDERAL EXPRESS

Mr. Steve Carter, Vice President Regulated Generation  
Cleco Corporation  
2030 Donahue Ferry road  
P.O. Box 5000  
Pineville, Louisiana 71361-5000

Dear Mr. Carter:

On June 28, 2010 the United States Environmental Protection Agency ("EPA") and its engineering contractors conducted a coal combustion residual (CCR) site assessment at the Brame (formerly known as Rodemacher) facility. The purpose of this visit was to assess the structural stability of the impoundments or other similar management units that contain "wet" handled CCRs. We thank you and your staff for your cooperation during the site visit. Subsequent to the site visit, EPA sent you a copy of the draft report evaluating the structural stability of the units at the Brame facility and requested that you submit comments on the factual accuracy of the draft report to EPA. Your comments were considered in the preparation of the final report.

The final report for the Brame facility is enclosed. This report includes a specific rating for each CCR management unit and recommendations and actions that our engineering contractors believe should be undertaken to ensure the stability of the CCR impoundment(s) located at the Brame facility. These recommendations are listed in Enclosure 2.

Since these recommendations relate to actions which could affect the structural stability of the CCR management units and, therefore, protection of human health and the environment, EPA believes their implementation should receive the highest priority. Therefore, we request that you inform us on how you intend to address each of the recommendations found in the final report. Your response should include specific plans and schedules for implementing each of the recommendations. If you will not implement a recommendation, please explain why. Please provide a response to this request by May 19, 2011. Please send your response to:

Mr. Stephen Hoffman  
US Environmental Protection Agency (5304P)  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

If you are using overnight or hand delivery mail, please use the following address:

Mr. Stephen Hoffman  
US Environmental Protection Agency  
Two Potomac Yard  
2733 S. Crystal Drive  
5<sup>th</sup> Floor, N-237  
Arlington, VA 22202-2733

You may also provide a response by e-mail to [hoffman.stephen@epa.gov](mailto:hoffman.stephen@epa.gov)

This request has been approved by the Office of Management and Budget under EPA ICR Number 2350.01.

You may assert a business confidentiality claim covering all or part of the information requested, in the manner described by 40 C. F. R. Part 2, Subpart B. Information covered by such a claim will be disclosed by EPA only to the extent and only by means of the procedures set forth in 40 C.F.R. Part 2, Subpart B. If no such claim accompanies the information when EPA receives it, the information may be made available to the public by EPA without further notice to you. If you wish EPA to treat any of your response as “confidential” you must so advise EPA when you submit your response.

EPA will be closely monitoring your progress in implementing the recommendations from these reports and could decide to take additional action if the circumstances warrant.

You should be aware that EPA will be posting the report for this facility on the Agency website shortly.

Given that the site visit related solely to structural stability of the management units, this report and its conclusions in no way relate to compliance with RCRA, CWA, or any other environmental law and are not intended to convey any position related to statutory or regulatory compliance.

If you have any questions concerning this matter, please contact Mr. Hoffman in the Office of Resource Conservation and Recovery at (703) 308-8413. Thank you for your continued ongoing efforts to ensure protection of human health and the environment.

Sincerely,  
/Suzanne Rudzinski/, Director  
Office of Resource Conservation and Recovery

Enclosures

## Enclosure 2 Brame Recommendations

4.3 CDM recommends that all trees and brush be cleared from the exterior slopes of all ash pond embankments under the supervision of a Professional Engineer in accordance with the procedures outlined in “FEMA 534 Technical Manual for Dam Owners – Impacts of Plants on Earthen Dams”. CDM further recommends that stumps and all roots greater than 1 inch in diameter be removed. Disturbed areas should then be graded to adjacent contours, using compacted structural fill and reseeded with desirable grass vegetation. CDM also recommends that vegetation be cut on a regular basis to ensure that adequate visual observations can be made during scheduled inspections.

4.4 CDM recommends Cleco take the following corrective actions:

- Waterline erosion – Provide protection of the interior slopes of the Fly Ash Pond embankments against wave erosion by placement of a layer of rock riprap over a layer of bedding and a filter material. Other material such as concrete facing, soil-cement, fabriform bags, slush-grouted rocks, steel sheet piling, and articulated concrete blocks can also be used. Extend armoring at least 3 feet below lowest anticipated pool elevation and at least 2 feet above normal pool elevation.
- Erosion rills – Erosion rills were observed on the interior and exterior slopes of the Bottom Ash Pond and Fly Ash Pond. Place and compact structural fill in the rills and grade to adjacent existing contours.
- Surface cracks – Numerous longitudinal cracks were observed in the crest of the Leachate Pond embankment and in the north and east interior slope of the Fly Ash Pond embankment. The cracks, generally located in areas of the slope where the embankment lacked a healthy grass cover, were approximately 1 to 2 inches wide, and extended approximately 15 inches below grade. Large (wider than 1 inch) well-defined longitudinal cracks extending parallel to the crest of the embankment may indicate the early stages of a slide on either the interior or exterior slope of the embankment. They can also create problems by allowing runoff to enter the cracks and saturate the embankment which in turn can cause instability of the embankment. CDM recommends an investigation into the cause of the observed cracking to identify remedial measures to treat the cracks if they are deemed a risk to the embankment. Additionally, CDM recommends that the area should be reseeded with desirable grass vegetation.
- Cracked concrete armoring – Replace cracked or missing concrete armoring in the Bottom Ash Pond. Extend armoring at least 3 feet below lowest anticipated pool elevation and at least 2 feet above normal pool elevation. All repairs should be designed by a professional engineer familiar with earthen dam construction.

4.5 CDM recommends in the future a buttress of deposited fly ash be left in place after each removal operation. CDM also recommends survey control and monitoring of contractor activities to help ensure excavation operations do not alter the slope angles needed to meet the required factors of safety with regard to slope stability.

4.6 To monitor the nature of the possible seepage conditions, CDM recommends Cleco take the following actions:

- Develop a regular surveillance program to monitor areas of seepage and potential seepage to evaluate the rate, volume, and turbidity of flow emerging from the embankment slopes;
- Develop and execute a geotechnical exploration program that includes additional test borings and installation of piezometers and other

instrumentation to analyze and regularly monitor embankment seepage and stability; and

- Continue to read groundwater levels in existing groundwater monitoring wells (W-3, W-4, W-18, W-19, and W-21) at a minimum of a semi-annual basis to establish an adequate base of seasonal water level fluctuations for use in stability analyses and to evaluate potential development of unstable embankment conditions and changes that may be indicative of seepage.

4.7 Evidence of rodent burrows and wild boar rooting was observed on the north embankment exterior slopes of the Bottom Ash Pond and Fly Ash Pond. Although not observed on other embankments, vegetation cover may have hidden additional animal activity. CDM recommends Cleco accurately document burrows and other areas disturbed by animal activity, remove the animals, and backfill the burrows and holes with compacted structural fill to protect the integrity of the embankments.

4.8 CDM recommends the installation of staff gauges to all outlet structures to monitor the water levels in all active impoundments and routinely monitoring water levels in the monitoring wells as recommended in Section 4.5 of this report.

4.9 It is recommended that detailed stability analyses be performed for these embankments utilizing the results of the subsurface program noted Section 4.5 above. The geotechnical investigation should also evaluate the existing soil conditions and engineering characteristics in the embankments and their supporting foundation soils. Stability analyses should consider all appropriate operating and loading conditions including flood conditions, rapid drawdown if applicable, and a seismic stability and liquefaction potential analysis of the upstream and downstream embankment slopes and foundation. CDM recommends that all analyses be performed by a registered professional engineer experienced in earthen dam design.

4.10 CDM also recommends that Cleco develop more-detailed inspection documentation procedures that include a sketch of relevant features observed, and the documentation should be periodically reviewed to identify if conditions are worsening and/or if significant changes are occurring that could lead to additional maintenance issues or safety concerns. Inspections should be made following heavy rainfall and/or high water events on Lake Rodemacher and the Red River, and the occurrence of these events should be documented. It is recommended that inspection records be retained at the facility for a minimum of three years.

4.11 CDM recommends that Cleco review their current facility response plan as it relates to the Bottom Ash Pond, Fly Ash Pond, and Leachate Pond for compliance and consistency with the Louisiana EPP Regulatory requirements. CDM also recommends that Cleco update and revise the current facility response plan as necessary.